Appendix C

PROPOSED

Note: The regulatory amendments proposed in this rulemaking are show in underline to indicate additions and ~~strikeout~~ to indicate deletions compared to the version amended on July 24, 1996. The entry "[No Change]" following a section means that amendments to that section are not being proposed.

Amend Title 13, California Code of Regulations, sections 1960.1 and 2102 to read as follows:

Section 1960.1. Exhaust Emission Standards and Test Procedures - 1981 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles.

(a) through (j) [No Change]

(k) The test procedures for determining compliance with these standards are set forth in "California Exhaust Emission Standards and Test Procedures for 1981 through 1987 Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles," adopted by the state board on November 23, 1976, as last amended May 20, 1987, and in "California Exhaust Emission Standards and Test Procedures for 1988 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles," adopted by the state board on May 20, 1987, as last amended ~~July 24, 1996~~ _____, both of which are incorporated herein by reference.

(l) through (p) [No Change]

(q) The Supplemental Federal Test Procedure (SFTP) exhaust emission levels from new 2001 and subsequent model passenger cars and light-duty trucks, with the exception of low-emission vehicles, ultra-low-emission vehicles, and super-ultra-low-emission vehicles, shall not exceed:

SFTP EXHAUST EMISSIONS STANDARDS FOR 2001 AND SUBSEQUENT MODEL-YEAR PASSENGER CARS AND LIGHT-DUTY TRUCKS
(grams per mile)(4)(5)(6)(7)(8)

Vehicle Type(1)	*Loaded Vehicle Weight (lbs)*	*Durability Vehicle Basis (mi)*	*NMHC(2) + NOx(1) Composite(3)*	*CO(1)*		
				A/C(1) Test	*US06(1) Test*	*Composite Option(3)*
PC	All	50,000	0.65	3.0	9.0	3.4
		100,000	0.91	3.7	11.1	4.2
LDT	0-3750	50,000	0.65	3.0	9.0	3.4
		100,000	0.91	3.7	11.1	4.2
LDT	3751-5750	50,000	1.02	3.9	11.6	4.4
		100,000	1.37	4.9	14.6	5.5

(1) *Abbreviations.*
"PC" means passenger car.
"LDT" means light-duty truck.
"NMHC+NOx" means non-methane hydrocarbon plus oxides of nitrogen emissions.
"CO" means carbon monoxide emissions.
"US06" means the test cycle designed to evaluate emissions during aggressive and microtransient driving.
"A/C" means air-conditioning.

(2) *Non-Methane Hydrocarbon Emissions.* Hydrocarbon emissions shall be measured in accordance with the "California Non-Methane Hydrocarbon Test Procedures." For alcohol-fueled vehicles certifying to these standards, including flexible fuel vehicles when certifying on methanol or ethanol, "Non-Methane Hydrocarbons" shall mean "Organic Material Non-Methane Hydrocarbon Equivalent."

(3) *Composite Standards.* Compliance with the composite standards shall be demonstrated using the calculations set forth in the section 86.164-00, Subpart B, Part 86, Title 40, Code of Federal Regulations.

(4) *SFTP.* SFTP means the additional test procedure designed to measure emissions during aggressive and microtransient driving, as described in section 86.159-00, Subpart B, Part

86, Title 40, Code of Federal Regulations, over the US06 cycle, and also the test procedure designed to measure urban driving emissions while the vehicle's air conditioning system is operating, as described in section 86.160-00, Subpart B, Part 86, Title 40, Code of Federal Regulations, over the SC03 cycle.

(5) *US06 Air to Fuel Ratio Requirement.* With the exception of cold-start conditions, the air to fuel ratio shall not be richer at any time than the leanest air to fuel mixture required to obtain maximum torque (lean best torque), with a tolerance of six percent of the fuel consumption. The manufacturer may request advance Executive Officer approval to use additional enrichment if the manufacturer demonstrates that additional enrichment is needed to protect the engine or emissions control hardware.

(6) *A/C-On Specific Calibrations.* A/C-on specific calibrations (e.g., air to fuel ratio, spark timing, and exhaust gas recirculation), with the exception of commanded enrichment, may be used which differ from A/C-off calibrations for given engine speed and load conditions. (Commanded enrichment shall be defined as excessive enrichment of the air to fuel ratio beyond stoichiometry for the purposes of increasing power output and protection of engine or emissions control hardware.) Such calibrations must not reduce NMHC plus NOx emission control effectiveness during A/C-on operation when the vehicle is operated under conditions which may reasonably be expected to be encountered in normal operation and use.

(7) *Phase-In Requirements.* For the purposes of this section 1960.1(q) only, each manufacturer's PC and LDT1 fleet shall be defined as the total number of PCs and LDTs from 0-3750 pounds loaded vehicle weight certified to the FTP exhaust standards of section 1960.1(f)(2) and certified as transitional-low-emission vehicles, and delivered for sale in California. Each manufacturer's LDT2 fleet shall be defined as the total number of LDTs from 3751-5750 pounds loaded vehicle weight certified to the FTP exhaust standards of section 1960.1(f)(2) and certified as transitional-low-emission vehicles, and produced and delivered for sale in California.

a. Manufacturers of PCs, and of LDTs, except small volume manufacturers, shall certify a minimum percentage of their PC and LDT1 fleet and a minimum percentage of their LDT2 fleet according to the following phase-in schedule.

	Percentage	
Model Year	*PC, LDT1*	*LDT2*
2001	80	80
2002 and subsequent	100	100

b. Small volume manufacturers of PCs and LDTs shall certify 100% of their PC and LDT fleet in the 2002 and subsequent model years.

(8) *Single-Roll Dynamometer Requirement.* For all vehicles certified to the SFTP standards, the single roll dynamometer or a dynamometer which produces equivalent results, as set forth in the "California Exhaust Emission Standards and Test Procedures for 1988 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles," must be used for all FTP and SFTP test elements to determine compliance with the associated standards.

(r) The Supplemental Federal Test Procedure (SFTP) standards in this section represent the maximum SFTP exhaust emissions at 4,000 miles +/- 250 miles or at the mileage determined by the manufacturer for emission-data vehicles in accordance with the "California Exhaust Emission Standards and Test Procedures for 1988 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles." The SFTP exhaust emission levels from new 2001 and subsequent model low-emission vehicles and ultra-low-emission vehicles in the passenger car and light-duty truck class, and new 2003 and subsequent low-emission vehicles, ultra-low-emission vehicles, and super-ultra-low-emission vehicles in the medium-duty class shall not exceed:

SFTP EXHAUST EMISSION STANDARDS FOR LOW-EMISSION VEHICLES, ULTRA-LOW-EMISSION VEHICLES, AND SUPER-ULTRA-LOW-EMISSION VEHICLES IN THE PASSENGER CAR, LIGHT-DUTY TRUCK, AND MEDIUM-DUTY VEHICLE CLASSES

(grams per mile)(7)(8)(9)

		US06 Test(1)(5)		*A/C Test(1)(6)*	
Vehicle Type(1)	*Loaded Vehicle Weight (lbs)(2)*	*NMHC(4) + NOx(1)*	*CO(1)*	*NMHC(4) + NOx(1)*	*CO(1)*
PC	All	0.14	8.0	0.20	2.7
LDT	0-3750	0.14	8.0	0.20	2.7
LDT	3751-5750	0.25	10.5	0.27	3.5
MDV	3751-5750	0.40	10.5	0.31	3.5
MDV	5751-8500(3)	0.60	11.8	0.44	4.0

(1) *Abbreviations.*
"PC" means passenger car.
"LDT" means light-duty truck.
"MDV" means medium-duty truck.
"NMHC+NOx" means non-methane hydrocarbon plus oxides of nitrogen emissions.
"CO" means carbon monoxide emissions.
"US06" means the test cycle designed to evaluate emissions during aggressive and microtransient driving.
"A/C" means air-conditioning.

(2) For MDVs, "Loaded Vehicle Weight" shall mean "Test Weight," which is the average of the vehicles's curb weight and gross vehicle weight.

(3) Vehicles with a gross vehicle weight rating over 8,500 pounds are exempted from the requirements of this subsection.

(4) *Non-Methane Hydrocarbon Emissions.* Hydrocarbon emissions shall be measured in accordance with the "California Non-Methane Hydrocarbon Test Procedures." For alcohol-fueled vehicles certifying to these standards, including flexible fuel vehicles when certifying on methanol or ethanol, "Non-Methane Hydrocarbons" shall mean "Organic Material Non-Methane Hydrocarbon Equivalent."

(5) *Air to Fuel Ratio Requirement.* With the exception of cold-start conditions, the air to fuel ratio shall not be richer at any time than the leanest air to fuel mixture required to obtain maximum torque (lean best torque), with a tolerance of six percent of the fuel consumption. The manufacturer may request advance Executive Officer approval to use additional enrichment if the manufacturer demonstrates that additional enrichment is needed to protect the engine or emissions control hardware.

(6) *A/C-On Specific Calibrations.* A/C-on specific calibrations (e.g., air to fuel ratio, spark timing, and exhaust gas recirculation), with the exception of commanded enrichment, may be used which differ from A/C-off calibrations for given engine speed and load conditions. (Commanded enrichment shall be defined as excessive enrichment of the air to fuel ratio beyond stoichiometry for the purposes of increasing power output and protection of engine or emissions control hardware.) Such calibrations must not reduce NMHC plus NOx emission control effectiveness during A/C-on operation when the vehicle is operated under conditions which may reasonably be expected to be encountered in normal operation and use.

(7) *SFTP*. SFTP means the additional test procedure designed to measure emissions during aggressive and microtransient driving, as described in section 86.159-00, Subpart B, Part 86, Title 40, Code of Federal Regulations, over the US06 cycle, and also the test procedure designed to measure urban driving emissions while the vehicle's air conditioning system is operating, as described in section 86.160-00, Subpart B, Part 86, Title 40, Code of Federal Regulations, over the SC03 cycle.

(8) *Phase-In Requirements***.** For the purposes of this 1960.1(r) section only, each manufacturer's PC and LDT1 fleet shall be defined as the total number of California certified low-emission and ultra-low-emission PCs and LDTs from 0-3750 pounds loaded vehicle weight produced and delivered for sale in California. Each manufacturer's LDT2 fleet shall be defined as the total number of California certified low-emission and ultra-low-emission LDTs from 3751-5750 pounds loaded vehicle weight produced and delivered for sale in California. Each manufacturer's MDV fleet shall be defined as the total number of California certified low-emission, ultra-low-emission, and super-ultra-low-emission MDVs less than 8501 pounds gross vehicle weight rating produced and delivered for sale in California.

a. Manufacturers of PCs, LDTs, and MDVs, except small volume manufacturers, shall certify a minimum percentage of their PC and LDT1 fleet, a minimum percentage of their LDT2 fleet, and a minimum percentage of their MDV fleet according to the following phase-in schedule.

	Percentage		
Model Year	*PC, LDT1*	*LDT2*	*MDV*
2001	25	25	NA
2002	50	50	NA
2003	85	85	25
2004	100	100	50
2005 and subsequent	100	100	100

b. Small volume manufacturers of PCs, LDTs, and MDVs shall certify 100% of their PC and LDT fleet in 2004 and subsequent model years and 100% of their MDV fleet in 2005 and subsequent model years.

(9) *Single-Roll Dynamometer Requirement.* For all vehicles certified to the SFTP standards, the single roll dynamometer or a dynamometer which produces equivalent results, as set forth in the "California Exhaust Emission Standards and Test Procedures for 1988 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles," must be used for all FTP and SFTP test elements to determine compliance with the associated standards.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43104, and 43105, Health and Safety Code. Reference: Sections 39002, 39003, 39667, 43000, 43009.5, 43013, 43018, 43100, 43101, 43101.5, 43102, 43103, 43104, 43105, 43106, 43107, and 43204 - 43205.5, Health and Safety Code.

Section 2101. Compliance Testing and Inspection - New Vehicle Selection, Evaluation, and Enforcement Action.

(a) [No Change]

(b) If the vehicles are selected for compliance testing, the selection and testing of vehicles and the evaluation of data shall be made in accordance with the "California New Vehicle Compliance Test Procedures," adopted by the state board on June 24, 1976 and last amended June 24, 1996. Testing of vehicles certified to the low-emission, ultra-low-emission, and super-ultra-low emission exhaust standards to determine compliance with the Supplemental Federal Test Procedure emission standards shall commence in the 2002 model year. Motorcycles scheduled for compliance testing shall be selected, tested, and evaluated in accordance with the "California New Motorcycle Compliance Test Procedures," adopted by the state board on June 30, 1977, and amended November 24, 1981.

(c) through (d) [No Change]

NOTE: Authority cited: Sections 39600, 39601 and 43104, Health and Safety Code. Reference: Sections 39002, 39003, 39500, 43000, 43106, 43202, 43210, 43211 and 43212, Health and Safety Code.